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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,336

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Hiroto Kidokoro

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06/23/2010

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EXAMINER

VAJDA, PETER L

ART UNIT

PAPER NUMBER

1795

NOTIFICATION DATE

DELIVERY MODE

06/23/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary	Application No. 10/593,336	Applicant(s) KIDOKORO, HIROTO	
	Examiner PETER L. VAJDA	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>09/19/2006, 02/08/2008, 02/04/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 and 18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2004-029584.

In this rejection, the Pre-Grant Publication of the applicant's specification (US PGP 2008/0038655) will be relied upon for ease of citation. JP 2004-029584 (henceforth JP '584) teaches a core/shell toner particle which is made by the same procedure with largely the same materials used in the inventive examples disclosed by the applicant and will therefore be shown to inherently possess many of the toner properties claimed by the applicant. In the ensuing inherency argument, the applicant's Production Example 1 and Example 1 (p. 11 [0141-148]) will be shown to be shown to form the same toner particle as Working Example 1 ([0052-55]) of JP '584. In

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Production Example 1 the applicant forms dipentaerythritol hexamyrystate (which is taught to have a hydroxyl value of 2.9 mgKOH/g) and ten parts of which is added to, in Example 1, 80.5 parts of styrene, 19.5 parts of n-butylacrylate, 0.5 parts of a polymethacrylate ester macromonomer (tradename AA6), 0.6 parts of divinylbenzene, 1.2 parts of t-dodecyl mercaptan, 7 parts of a pigment, and 6 parts of a charge controlling resin to prepare a polymerizeable monomer composition for the toner core (p. 11 [0141-143]). Similarly, JP '584 teaches that 10 parts of dipentaerythritol hexamyrystate, 80.5 parts of styrene, 19.5 parts of n-butylacrylate, 0.5 parts of divinylbenzene, 0.3 parts of a polymethacrylate ester macromonomer (tradename AA6), 1.2 parts of t-dodecyl mercaptan, 7 parts of carbon black (pigment), 1 part of a charge control resin and 10 parts of a hydrogenated petroleum resin were added to form an almost identical polymerizeable monomer composition for the toner core ([0052], Claim 1). Separate from the monomer core composition, both the applicant (p. 11 [0144] and JP '584 ([0053]) teach the formation of a magnesium hydroxide colloidal dispersion by dissolving 6.2 parts of sodium hydroxide in 50 parts water and then gradually adding an aqueous solution containing 10.2 parts of magnesium chloride in 250 parts of water. Additionally, the applicant teaches the formation of a dispersion of polymerizeable monomer for the toner shell by mixing 2 parts of methyl methacrylate based monomers in 65 parts water (p. 11 [0145]) while JP '548 also teaches mixing 2 parts of methyl methacrylate in 65 parts water ([0053]). After the three dispersion have been formed, both the applicant and JP '548 teach that the polymerizable monomer composition for the core particles be added to the colloidal dispersion of magnesium hydroxide which is

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stirred until droplets are formed. To this is added t-butyl peroxyisobutyrate (Perbutyl IB) by the applicant and t-butyl peroxy 2-ethylhexanoate (Perbutyl O) by JP '548 and both then teach that the mixtures be stirred at 15,000 rpm under shearing force using an Ebara Milder MDN303V to form finer droplets (p. 11 [0146] for applicant and [0054] for JP '548). The resultant dispersion is then taught by both the applicant and JP '548 to be transferred to a reactor vessel and heated to 85 C to initiate polymerization and when the conversion to the monomers to polymer has reached almost 100%, a water soluble polymerization initiator VA-086 is added to the monomer dispersion for the shell and the shell dispersion is added to the reactor and allowed to react for 4 hours (p. 11 [0147] for applicant and [0055] for JP '548). Both the applicant and JP '548 then teach that the polymerized particles be stirred at room temperature and washed with sulfuric acid to reduce the pH of the system to around 4 or less. The solution is then filtered and dehydrated to obtain dry colored resin particles (p. 11 [0148] for applicant and [0055] for JP '548). To the dried particles are then added 1.0 parts silica surface additives by JP '548 ([0056]) and a mixture of silica and organic particles as surface additives by the applicant (p. 11-12 [0148]). Therefore, both the applicant and JP '548 teach identical production methods for their toner particles and nearly identical materials. As such, the toner particles taught by JP '548 would be expected to inherently possess the same arithmetic average roughness, 10 point average roughness, angle of repose, transformation ratio, glass transition temperature, circularity, absolute zeta potential after allowing the toner to stand for 24 hours (E1) and difference between the absolute

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zeta potential of the toner allowed to stand for 2 weeks (E2) and E1 taught by the applicant in pending claims 1, 2, 4, 11 and 18.

The parting agent, dipentaerythritol hexamylate, taught by JP '548 was shown to be the same as that disclosed by the applicant to have a hydroxy value of 2.9 mgKOH/g above and is further by JP '548 to be used in an amount of 10 parts as compared to 100 parts of the binder resin (not including the shell resin, calculated by adding the 80.5 parts styrene and 19.5 parts n-butylacrylate) and therefore, the applicant's product (a x b) taught in pending claim 3 in the disclosure of JP '548 would be 29, which anticipates the applicant's disclosed range (Claim 3). Furthermore, JP '548 teaches generally that multifunctional ester compounds be used as waxes (parting agents) and that they possess acid values of less than 10 mgKOH/g ([0019], Claim 5). In the example taught by JP '548 cited above, 10 parts of the multifunctional ester wax is dissolved in 80.5 parts styrene and therefore satisfies the conditions recited in the applicant's pending claim 6. JP '548 also teaches the use of a charge control resin having a glass transition temperature of from 40 to 80 C as a charge control agent ([0016-17], Claims 7-9). The toner of Example 1 described above is also taught by JP '548 to have a ratio D_v/D_p of 1.14, which is within the range taught by the applicant in pending claim 12 (Table 1 and [0055], Claim 12). Additionally, the toner disclosed in Example 1 of JP '584 is taught to have a volume average particle diameter of 7.8 micrometers ([0055], Claims 1 and 10).

Claims 1-8 and 10-18 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Itoh (US PGP 2004/0106058).

In this rejection, the Pre-Grant Publication of the applicant's specification (US PGP 2008/0038655) will be relied upon for ease of citation. Itoh teaches a core/shell toner particle which is made by the same procedure with largely the same materials used in the inventive examples taught by the applicant and will therefore be shown to inherently possess many of the toner properties claimed by the applicant. In the ensuing inherency argument, the applicant's Production Example 1 and Example 1 (p. 11 [0141-148]) will be shown to be shown to form the same toner particle as Example 1 (p. 9 [0100-105] of Itoh. In Production Example 1 the applicant forms dipentaerythritol hexamyrystate (which is taught to have a hydroxyl value of 2.9 mgKOH/g) and ten parts of which is added to, in Example 1, 80.5 parts of styrene, 19.5 parts of n-butylacrylate, 0.5 parts of a polymethacrylate ester macromonomer (tradename AA6), 0.6 parts of divinylbenzene, 1.2 parts of t-dodecyl mercaptan, 7 parts of a pigment, and 6 parts of a charge controlling resin to prepare a polymerizeable monomer composition for the toner core (p. 11 [0141-143]). Similarly, Itoh teaches that 10 parts of dipentaerythritol hexamyrystate, 89 parts of styrene, 11 parts of n-butylacrylate, 0.725 parts of divinylbenzene, 0.25 parts of a polymethacrylate ester macromonomer (tradename AA6), a magenta pigment and 12 parts of a charge control resin were added to form an almost identical polymerizeable monomer composition for the toner core (p. 9 [0100] and [0102], Claim 1). Separate from the monomer core composition, both the applicant

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(p. 11 [0144]) and Itoh (p. 9 [0101]) teach the formation of a magnesium hydroxide colloidal dispersion by dissolving just over 6 parts of sodium hydroxide in 50 parts water and then gradually adding an aqueous solution containing over 10 parts of magnesium chloride in 250 parts of water. Additionally, the applicant teaches the formation of a dispersion of polymerizable monomer for the toner shell by mixing 2 parts of methyl methacrylate based monomers in 65 parts water (p. 11 [0145]) while Itoh also teaches mixing 2 parts of methyl methacrylate in 65 parts water ([0053]). After the three dispersion have been formed, both the applicant and Itoh teach that the polymerizable monomer composition for the core particles be added to the colloidal dispersion of magnesium hydroxide which is stirred until droplets are formed. To this is added t-butyl peroxyisobutyrate (Perbutyl IB) by the applicant and t-butyl peroxy 2-ethylhexanoate (Perbutyl O) by Itoh and both then teach that the mixtures be stirred at 15,000 rpm under shearing force using an Ebara Milder MDN303V to form finer droplets (p. 11 [0146] for applicant and p. 9-10 [0103] for Itoh). The resultant dispersion is then taught by both the applicant and Itoh to be transferred to a reactor vessel and heated to about 85 C to initiate polymerization and when the conversion to the monomers to polymer has reached almost 100%, a water soluble polymerization initiator VA-086 is added to the monomer dispersion for the shell and the shell dispersion is added to the reactor and allowed to react for 4 hours (p. 11 [0147] for applicant and p. 9-10 [0103] of Itoh). Both the applicant and Itoh then teach that the polymerized particles be stirred at room temperature and washed with acid to reduce the pH of the system to around 4 or less. The solution is then filtered and dehydrated to obtain dry colored resin particles (p. 11

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[0148] for applicant and p. 9-10 [0103] of Itoh). The resultant toner particles are taught by Itoh to have a circularity of 0.982 and a volume average particle diameter of 6.4 microns (p. 10 [0104], Claims 1, 10 and 11). To the dried particles are then added 1.0 parts calcium carbonate with a volume average particle size of 0.3 microns, 0.5 parts silica with a volume average particle diameter of 12 nm and 2.0 parts of silica with a volume average particle diameter of 40 nm and are mixed at 1400 RPM to obtain a toner (Itoh, p. 10 [0105], Claims 13 and 15-17). To the applicant's dried particles it is similarly taught to add 0.5 parts of an organic particle with a volume average particle diameter of .35 microns, 0.8 parts of a silica particle having a volume average particle diameter of 12 nm and 1.0 parts of another silica particle having a volume average particle diameter of 40 nm (p. 11-12 [0148]), all of which is then mixed at 1400 RPM to obtain a toner. Therefore, both the applicant and Itoh teach identical production methods for their toner particles and nearly identical materials. As such, the toner particles taught by Itoh would be expected to inherently possess the same arithmetic average roughness, 10 point average roughness, angle of repose, transformation ratio, glass transition temperature, absolute zeta potential after allowing the toner to stand for 24 hours (E1) and difference between the absolute zeta potential of the toner allowed to stand for 2 weeks (E2) and E1 taught by the applicant in pending claims 1, 2, 4, 11 and 18.

The parting agent, dipentaerythritol hexamyrystate, taught by Itoh was shown to be the same as that disclosed by the applicant to have a hydroxy value of 2.9 mgKOH/g above and is further by Itoh to be used in an amount of 10 parts as compared to 100

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parts of the binder resin (not including the shell resin, calculated by adding the 89 parts styrene and 11 parts n-butylacrylate) and therefore, the applicant's product (axb) recited in pending claim 3 would be 29, which anticipates the applicant's disclosed range (Claim 3). Furthermore, Itoh teaches generally that multifunctional ester compounds be used as waxes (parting agents) and that they possess acid values of less than 10 mgKOH/g (p. 3 [0035], Claim 5). In the example taught by Itoh cited above, 10 parts of the multifunctional ester wax is dissolved in 89 parts styrene and therefore satisfies the conditions recited in the applicant's pending claim 6. Itoh also teaches the use of a charge control resin as a charge control agent ([0016-17], Claims 7-8). The toner of Example 1 described above is also taught by Itoh to have a ratio D_v/D_p of 1.21, which is within the range taught by the applicant in pending claim 12 (p. 10 [0104], Claim 12). Additionally, the toner disclosed in Example 1 of Itoh is taught to have a volume average particle diameter of 6.4 micrometers (p. 10 [0104], Claims 1 and 10).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh (US PGP 2004/0106058) in view of JP 2004-029584.

The complete discussions of Itoh and JP '584 above are included herein in their entirety. Both Itoh and JP '584 teach nearly identical toner particles. Both also teach the use of similar kinds of charge control resins as adjuvants in their toners. Itoh, however, does not teach a suitable glass transition temperature range for said charge control resins. JP '584 teaches that when said charge control resins have a glass transition temperature in a range of from 40 to 80 C, the preservability and fixability of a

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toner can be raised with sufficient balance between the two properties. Therefore, it would have been obvious to any person of ordinary skill in the art at the time of the invention to have made the toner particles of Itoh wherein the glass transition temperature of the charge control resins was maintained between 40 and 80 C as taught by JP '584. This would have improved both the preservability (and therefore shelf-life) and fixability of the toner particles taught by Itoh.

Claims 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2004-029584 in view of Itoh (US PGP 2004/0106058).

The complete discussions of Itoh and JP '584 above are included herein in their entirety. Both Itoh and JP '584 teach nearly identical toner particles. However, JP '584 does not teach the use of multiple silica particles having the particle sizes taught by Itoh. Itoh teaches the use of an inorganic particle (A) having an average primary particle diameter in the preferable range of from 0.1 to 1.0 microns (p. 4 [0045], Claim 14), a small-sized silica particle (B) having an average primary particle diameter in the range of from 5 to 18 nm and a large sized silica particle (C) having an average primary particle diameter of from 20 to 60 nm (p. 4-5 [0049], Claims 13 and 15). Itoh further teaches that if the small-sized silica particle (B) is below 5 nm the photoconductor tends to cause filming while if the large-sized silica particle (C) is above 60 nm, the toner tends to have poor fluidity and causes blurring. Furthermore, the use of inorganic particles (A) is taught to allow easy removal of residual toner from the cleaning blade and improve cleaning performance and further that this property is dependent on the

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size of said particle (p. 4 [0045]). Furthermore, the cleaning performance of the toner comprising the inorganic particles (A) is also taught to be dependent on said particles being applied to the colored particles in an amount of 0.1 to 5 parts by weight (p. 4 [0047], Claim 16). Itoh further teaches that the two silica particles be present in an amount of from 0.1 to 3 parts by weight (p. 5 [0050], Claim 17). JP '584 also teaches the use of silica particles, but does not teach a suitable size range for said particles. Therefore, in order to prevent filming, improve fluidity, improve cleaning performance and prevent blurring, it would have been obvious to any person of ordinary skill in the art at the time of the invention to have employed the surface additive particles taught by Itoh in the toner particles taught by JP '584. Furthermore, since the toners taught by JP '584 and Itoh are produced in largely identical methods using largely identical materials one of ordinary skill in the art would have recognized that the problems taught to be associated with the sizes and types of surface additives in the toners of Itoh would have been present as well in the toners of JP '584 and would have also had a high expectation of success in modifying the toner of JP '584 to include the surface additive package taught by Itoh.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER L. VAJDA whose telephone number is (571)272-7150. The examiner can normally be reached on 7:00AM-4:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter L Vajda/
Examiner, Art Unit 1795
6/17/2010